SHORT TERM R& D IPP 96/188 REPORT

A CONTROLLED STUDY OF COGNITIVE PSYCHOTHERAPY IN SCHIZOPHRENIA

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Semua laporan kemajuan dan laporan akhir yang dikemukakan kepada Bahagian Penyelidikan dan Pembangunan perlu terlebih dahulu disampaikan untuk penelitian dan perakuan Jawatankuasa Penyelidikan di pusat pengajian

BAHAGIAN PENYELIDIKAN & PEMBANGUNAN

CANSELORI

UNIVERSITI SAINS MALAYSIA

Laporan Akhir Projek Penyelidikan Jangka Pendek

1) **Nama Penyelidik:** Prof. Madya Dr. Azhar M. Zain

Nama Penyelidik-Penyelidik Lain ***(Jika berkaitan)*** :

2) **Pusat Pengajian/Pusat/Unit :** Sains Perubatan

3) **Tajuk Projek:** A controlled study of cognitive psychotherapy in schizophrenia.

Lampiran 1

4) (a) **Penemuan Projek/Abstrak**

*(Perlu disediakan makluman di antara 100 - 200 perkataan di dalam **Bahasa Malaysia dan Bahasa Inggeris** Ini kemudiannya akan dimuatkan ke dalam Laporan Tahunan Bahagian Penyelidikan & Pembangunan sebagai satu cara untuk menyampaikan dapatan projek tuan/puan kepada pihak Universiti).*

Beberapa kaedah psikologi untuk mengurangkan gejala psikosis telah di laporkan. Teknik terkini adalah terapi kognitif. Kita telah menerangkan sebelum ini di dalam satu kajian menggunakan dua orang pesakit yang menunjukkan respon terhadap terapi kognitif yang telah mengurangkan delusi pesakit dan pengurangan itu telah berterusan sehingga tamat kajian iaitu 18 bulan selepas ~~interaksi~~ intervensi di hentikan. Kajian kali ini akan menerangkan suatu eksperimen yang menggunakan terapi kognitif untuk merawat delusi kronik yang resisten pada pengubatan (melebihi 2 tahun resisten) pada 20 pesakit schizophrenia. Respondpositif pada semua kes kajian dengan tidak ujudnya gantian gejala dan respond yang berterusan sehingga 3 bulan interaksi, menunjukkan bahawa teknik ini adalah berguna dan lebih banyak kajian perlu dijalankan terhadap teknik yang dapat memberi harapan kepada pesakit psikosis.

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A number of psychological approaches to alleviating symptoms have been reported in the literature. The latest technique among them is cognitive therapy (CT). We have described an experiment using two patients who responded to cognitive therapy to reduce their delusions and the reduction was maintained until the end of the study which was 18 months after stopping

intervention. This paper describes an experiment that makes us of cognitive psychotheraphy to treat chronic drug resistant delusions (more than 2 years duration) in 20 patients with schizophrenia. The positive response of all study subjects with the absence of symptom replacement and maintainance of response at 3 months follow-up, seem to imply that this technique is useful and more effort needs to be invested into this area of psychotheraphy for psychosis.

(b) **Senaraikan Kata Kunci yang digunakan di dalam abstrak:**

Bahasa Malaysia	**Bahasa Inggeris**
Delusi	Delusion
Psikoterapi	Psychotherapy
Terapi Kognitif	Cognitive therapy
Skizofrenia	Schizoprenia

5) Output Dan Faedah Projek

(a) Penerbitan *(termasuk laporan/kertas seminar)*
(Sila nyatakan jenis, tajuk, pengarang, tahun terbitan dan di mana telah diterbit/dibentangkan).

1. Laporan preliminary dibentangkan di First Asia Pasific Congress on Psychosocial Rehabilitation, 12.09.97 - 14.09.97, Kuala Lumpur. Tajuk - Comparison of Risperidone and Other Neuroleptics in the Management of Chronic Schizophrenia Using Cognitive Therapy.
2. Laporan penuh akan dibentangkan di 14th World Congress of Psychotherapy, Warsaw, Poland. 23.08.98 - 28.08.98 Tajuk - Effect of Cognitive Psychotherapy on Schizophrenic Patients - Preliminary Report of A Controlled Study.
3. Laporan akan dihantar ke Journal Psikiatri untuk diterbitkan.

(b) **Faedah-Faedah Lain Seperti Perkembangan Produk, Prospek Komersialisasi Dan Pendaftaran Paten:**
(Jika ada dan jika perlu, sila gunakan kertas berasingan)

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(c) **Latihan Gunatenaga Manusia**

i) Pelajar Siswazah ..Latihan dapat diberikan pada pelajar..... siswazah memandangkan penerbitan terdahulu telah mendapat perhatian oleh siswazah Universiti ~~Islam~~ Kompleks..... Laporan preliminary di Kuala Lumpur itu telah dijadikan bahan oleh UKM dan dirujuk pelajar siswazah UKM.

ii) Pelajar Prasiswazah: .....

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iii) Lain-Lain : .....

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6. **Peralatan Yang Telah Dibeli:**

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UNTUK KEGUNAAN JAWATANKUASA PENYELIDIKAN UNIVERSITI

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T/TANGAN PENGERUSI
J/K PENYELIDIKAN
PUSAT PENGAJIAN

PART ONE

In this section we describe a preliminary attempt at treating two patients of schizophrenia with Connitive Psychotherapy.

SUMMARY

A number of psychological approaches to alleviating psychotic symptoms have been reported in the literature such as social reinforcements (1), time-out (2), punishment (3), assertive training (4), exercise (5), stimulus control (6), self-instruction (7), thought stopping (8), control of stimulus input (9), biofeedback (10), and self-control (11) among others. The first part of this research paper describes an experiment that makes use of cognitive psychotherapy to treat chronic drug resistant delusions (more than 12 years duration) in two patients with schizophrenia. The positive response of both patients with the absence of symptom replacement and maintainance of response at 18 months follow-up, seem to imply that this technique is useful and more effort needs to be invested into this new area of psychotherapy for psychosis.

KEY WORDS:

Delusion
Psychotherapy
Cognitive therapy
Schizophrenia

INTRODUCTION

Despite advances in pharmacological treatments for positive schizophrenia symptoms, many sufferers of schizophrenia continue to experience residual psychotic symptoms. In recent times too, there has been a growing interest in studying particular symptoms of psychosis, such as hallucinations and thought disorder (12,13).

However, in spite of the fact that delusions are extremely common in psychosis, this symptom has suffered experimental neglect (14,15,16). Before we embark on a process of treatment of delusions, we have to understand the definition of delusions. Karl Jaspers (17) said of delusions: "The term delusions is vaguely applied to all false judgments that share

the following characteristics to a marked, though undefined, degree: (a) they are held with an extraordinary conviction, with an incomparable, subjective certainty; (b) there is an imperviousness to other experiences and to compelling counter-argument; (c) their content is impossible". Jasper's work still stands as one of the most important treatises on delusions and his definition is the basis of modern definitions of delusions. This can be seen in a standard modern textbook of psychiatry where delusions are defined by Mullen(18) as having five elements; absolute conviction, self-evidence, lack of amenability to reason, fantastic or inherently unlikely content, and being a belief not shared by the believer's own subculture. However, modern understanding of delusions has lost some of the depth of the original works, and they are often viewed as unitary, all or nothing phenomena, particularly in relation to the diagnosis of psychosis. This view does not do justice to the known complexity of delusional experiences, and particularty to the complexity of the changes that occur during the process of recovery from delusions.

Our theoretical perspective on delusions has been influenced by two main sources, the literature on verbal self-regulation of behavior (19,20) and Maher's work on delusions (21,22). Our interest has been on the common features of delusional thinking. Maher (21,22) proposed that a delusion can be regarded as a normal attempt to make sense of an abnormal perceptual experience. A clear paradigm case would be a delusion that was secondary to auditory hallucinations, the argument here being that the hallucinations puzzled and perhaps distressed the individual concerned and so he or she searches for a meaningful explanation of them. The delusion would arise from this effort after meaning, and would be invested with psychological force of having rid the individual of the sense of bewilderment. According to Maher, the reasoning processing that produces delusions does not differ from that which produces so-called "normal" beliefs, it is just that bizarre perceptions demand bizarre explanations.

Maher's contention that a delusion may be rational, although incorrect, has been questioned recently with the discovery that people with delusions have biased reasoning (23). Under certain experimental conditions people with delusions appear to show bias in their attributional style, in their judgment of covariance, and in their probabilistic reasoning (24).

Traditionally delusions have been defined on the basis of empirical claims of discontinuity eg. as beliefs that were undeniably false, that were held with total and unshakable conviction, that were not shared by others with the same cultural background and that were based on incorrect inference (DSM IV) (25). Individually these criteria have been disputed: thus, a delusion need not be false (26), it need not be held with absolute or unshakeable conviction (27,28), and it need not be based on incorrect inference (29). The criterion relating to the unusual content of delusions also may be questioned, since research has demonstrated how difficult it is to rate the "bizarreness" of delusions(29). Traditional criteria have also been challenged by a radical and exciting call to define delusions as points on a continuum with normality, the position on this continuum being influenced by dimensions of delusional experience such as degree of belief conviction and the extent of preoccupation with the belief (30). As well as stressing continuity, this new perspective also places great emphasis on the individual and on individual differences.

We have extensively reviewed techniques used to modify delusions based on the above theories (31) and suggested a treatment package. We now describe two cases that we experimented using the treatment package.

METHODOLOGY

Subject: The patient selected for the study were those diagnosed as schizophrenia based on the DSM 1V criteria (25) by an independent psychiatrist. They were both outpatients. Mr. M.G . has a diagnosis of schizophrenia , paranoid type for 12 years while Ms. C.S has the same diagnosis for 15 years. Both were in residual stages of the illness and were on maintainance doses of chlorpromazine (Mr. M.G., 400 mg/day; Ms. C.S., 500 mg/day). Mr. M.G. was in his early fourties while Ms. C.S. was in her late thirties.

Mr. M.G. believed that he was satan and that people were out to harm him. Ms. C.S. on the other hand believed that she was a prostitute and that people were out to catch her, put her in a coffin and cremate her alive.

Measures: Following Brett-Jones et. al. (27), we measured both degree of belief conviction and preoccupation. Following Hole et. al. (32) degree of conviction was also measured by asking for percentage rating of conviction. All measures were administered at the end of every session throughout the entire study.

Again in keeping with Brett-Jones et. al. (27), accomodation and reaction to hypothetical contradiction (RTHC) were assessed. These were assessed at the start of the sessions.

Because little is known about the potential effects on other behavior of the loss, or partial loss, of a delusion, it seemed desirable to cover at least some of the possible clinical ramifications. To achieve this, two further measures were used. These were the Beck Depression Inventory (BDI) (33), Beck Anxiety Inventory (BAI) and a short symptom checklist comprising the various schizophrenic delusions and hallucinations as described in Wing's Present State Examination (34). It should be emphasized that the symptom checklist was used not in any diagnostic capacity but solely for descriptive purposes. These were administered both before and at the end of intervention phase, and at each follow-up date.

Procedure: Sessions lasting approximately 40 minutes to one hour each were conducted once a week throughout the study. All interviews were conducted by the author. A detailed description of the procedure can be found in Azhar and Varma (31).

(a) Baseline: Throughout this phase as much relevant data as possible about the patient's beliefs and evidences for the beliefs were established and patients were asked to rank them in order. At no point were their beliefs or evidences challenged at this time. This phase took a minimun of five weeks.

(b) Disputing beliefs : This phase took a maximum of 16 weeks. Following Brett-Jones et. al. (27) we assessed RTHC first. We then challenged the delusions using the "verbal challenge" procedure of Lowe and Chadwick (35), and incorporating the non-confrontational approach of Milton et. al. (36) and Watts et. al. (28). This phase is ended with reality testing as described by Hole et. al. (32).

(c) Follow-up: To assess for maintainance of behaviour change, 1-month, 2-month, 3-month, 6-month, 9-month, 12-month, 15-month, and 18-month follow-up meetings were conducted. At these sessions all the measures were administered. After the final follow-up, an independent psychiatrist interviewed both patients to assess their conviction in the delusional belief at that point in time.

RESULTS

Belief conviction

The primary measure of recovery from delusions was the degree of believe conviction. The beliefs used for assessment of Mr.M.G. were broken down into (i) I am satan, (ii) people on the street are making fun at me, (iii) my neighbours are plotting against me, while Ms. C.S were (i) it's my fault I was rape, (ii) I am a prostitute, (iii) I will be cremated alive. Each belief was challenged separately during the intervention phase, but for both patients one of their beliefs seem to be dominant, and when this belief was under control the other beliefs were more easily challenged and improved quickly. For Mr. M.G. it was belief (i) and for Ms. C.S. it was belief (iii). Figures I and 2 show the different percentage conviction scores for each patients in different phases of the study. During baseline sessions, percentage conviction was extremely stable for both patients. But for Mr. M.G., beliefs (ii) and (iii) were dropping even at baseline after belief (i) was challenged i.e. indicating that belief (i) was dominant and had influence on the other two beliefs which were subsequently easily challenged. Ms. C.S. however had great difficulty with challenging belief (i) and only at week 14 was there a major shift in disputing her belief and it was not until belief (iii) was conquered when belief (i) by itself without challenging began to drop at week 18 indicating the strong possibility that belief (iii) was the dominant one. At follow-ups, the change in belief convictions for both patients were maintained. For both patients, the use of reality testing after verbal challenge helped to reduce the conviction score. In the case of Ms. C.S., reality testing was difficult to do for belief (i) and this further made it diffucult to bring down the conviction score.

Accomodation

During the baseline interviews, both patients did not recognize an external event that caused them to reject their delusional belief or to lower conviction in that belief. However following the introduction of verbal challenge, both patients were able to report instances of disconfirmation.

Reaction to hypothetical contradiction.

As shown in table I, when faced with hypothetical contradiction, both patients responded on several occasions that if such an occurence did take place, they would either lower their belief conviction or reject their belief althogether.

Beck Depression / Anxiety Inventory

Figure 3 shows clearly the decline in both depression and anxiety scores for both patients as the belief conviction score declines.

Symptom checklist

Results from the symptom checklist revealed that both patients did not report any new symptom during the study. The symptom checklist proved sensitive to the changes in belief conviction brought about by the intervention for both patients.

Validation of the effect

the effect of the intervention was externally validated by an independent psychiatrist with interviews being conducted after the final follow-up. Mr. M.G. reported that although his belief was not completely extinguished, he was able to understand that there were different ways of thinking about his ideas and there were other plausible explainations other than the delusion. He quantified the drop in his belief conviction at 80 %. The clinician concluded that the intervention had given Mr. M.G. insight and coping skills that continued to be of benefit. Ms. C.S. reported that she too could understand the different ways of looking at her beliefs and although her overall belief convictions has dropped by 60 %, she needed frequent reality testing to reconvince herself of the wrong beliefs. The clinician also concluded that Ms. C.S. has learned coping skills and gained sufficient insight to her beliefs and that the intervention was definitely beneficial.

DISCUSSION

As with other research that have tried to modify delusional thinking in people with schizophrenia (8,28,35,36), our study indicates that very obvious reductions in delusional beliefs can be achieved in a relatively small number of sessions, for example all of Mr. M.G's delusional beliefs were reasonably and effectively reduced by the 12th session, and in his case too, the belief can even be reduced during baseline sessions. The key is to analyse the beliefs correctly at baseline and decide effectively which belief to challenge first. This will make subsequent challenging of other beliefs easier. The case of Ms. C.S. clearly explains this. Had her belief "I will be cremated alive" be tackled first, it would have been faster to reduce her other convictions. This is further explained by the fact that when this belief was reduced effectively, her other belief "It was my fault I was raped" reduced on its own without being challenged anymore. To analyse these beliefs effectively, it is advisable if a conceptualization of the beliefs based on the cognitive model be

constructed first along the line described by Azhar and Varma (31). However, a proper controlled study is warranted to test this hypothesis.

However Watts et al (28) advocate tackling the beliefs with the least conviction first. We do not disagree but once the analysis indicates which belief is the dominant one, we tend to favour tackling it first irrespective of its conviction score, but the method of challenging each belief should be the one advocated by Watts et al (28) to prevent "psychological reactance".

Clearly these findings do not support the view that delusions are the result of motivational factors and not amenable to the kind of verbal challenge used in this present study, and consistent with the findings of Milton et al (36), there was a correlation between decline in conviction of the delusion and the reduction in overall psychiatric disturbance as shown in this study by the BDI and BAI. The result of the symptom checklist too offer no evidence of "symptom replacement" following the weakening of the delusional belief.

The verbal challenge produced a strong reduction in conviction score in both patients and subsequently reality testing further reduced the belief conviction. This same effect has been shown recently by Chadwick and Lowe (37) in their experiments. In the case of Mr.M.G., belief (ii) was completely rejected after reality testing.

In Hole's et al study (32), both the patients who experienced a reduction in belief conviction subsequently came to view their beliefs less as absolute truth and more as hypotheses that they could "reality test". The same happens in our study. Both patients appeared to engage in reality testing after intervention with verbal challenge and were more eager to further engage in reality testing to test out their "hypotheses" which were originally construed as "beliefs". This accomodation test also seems to work best after intervention and not before i.e at the baseline sessions. In Brett-Jones study (27), the results on the accomodation measure suggest that such patients are not actively engaged in an ongoing process of reality testing their beliefs.

The RTHC measure revealed that when actually confronted with an instance of hypothetical contradiction, on some occasions, both patients said it would lead them to lessen their belief conviction and in the case of Mr.M.G., would reject the belief entirely. This would seem to suggest that although they have the potential to accomodate contradiction, this was not evident in their everyday lives as shown by their performance on the accomodation test and especially in the case of Ms. C.S.. Brett-Jones et al (27) reported that those subjects who ultimately entirely rejected their delusional beliefs dealt with hypothetical contradiction in a more rational way than those who did not , and this lead them to speculate that RTHC might be of some value in predicting the success of attempts at belief modification. This study seems to support this idea. Mr.M.G. who was more responsive to RTHC was also more sensitive to the interventions.

Harrow, Rattenbury and Stoll (38) discussed the issue of "private events". They argue that in modification studies it is possible that demand characteristics will bring about changes in a subject's overt verbal behaviour while leaving it unaltered at the covert level,

i.e. they might acknowledge that their beliefs are implausible to others without doubting that they are true. To address this problem, in our study, the independent assessments by the psychiatrist were essential in recognizing that the reduction in the degree of belief conviction in both patients were, indeed, true.

The approach of our intervention is conceptually consistent with the notion of a continuum of functioning by Strauss (30) and the views of Maher (22) who states that "the cognitive processes whereby delusions are formed differ in no important respect from those by which non-delusional beliefs are formed". The patients in our study found it beneficial to see their beliefs as having arisen out of their life experiences and that their reactions were understandable. This and the added impact of normalization, emphasized the extent to which the patients were like other people, rather than set apart by a "mental illness".

The most important aspect of the intervention is that the degree of belief conviction were maintained at a low level even at the 18th. month follow-up and independent assessments indicating that this method can be of benefit to those patients whose delusions did not seem to be controlled effectively with drugs. We are not indicating that drugs should be abandoned, but we believe, in spite of the very limited work to date in this area, it seems that much more can be done for this group of patients in terms of psychotherapy then one would tend to acknowledge.

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	WEEKS						
SUBJECTS	14	15	16	17	18	19	20
Mr. M.G.	0	0	1	2	2	3	3
Ms. C.S.	0	0	0	0	1	2	2

NOTE: 0= no change
1= change in belief content but not conviction
2= change in belief conviction but not content
3= rejection of belief

TABLE 1: Measures of RTHC at weeks 14 to 20 of intervention

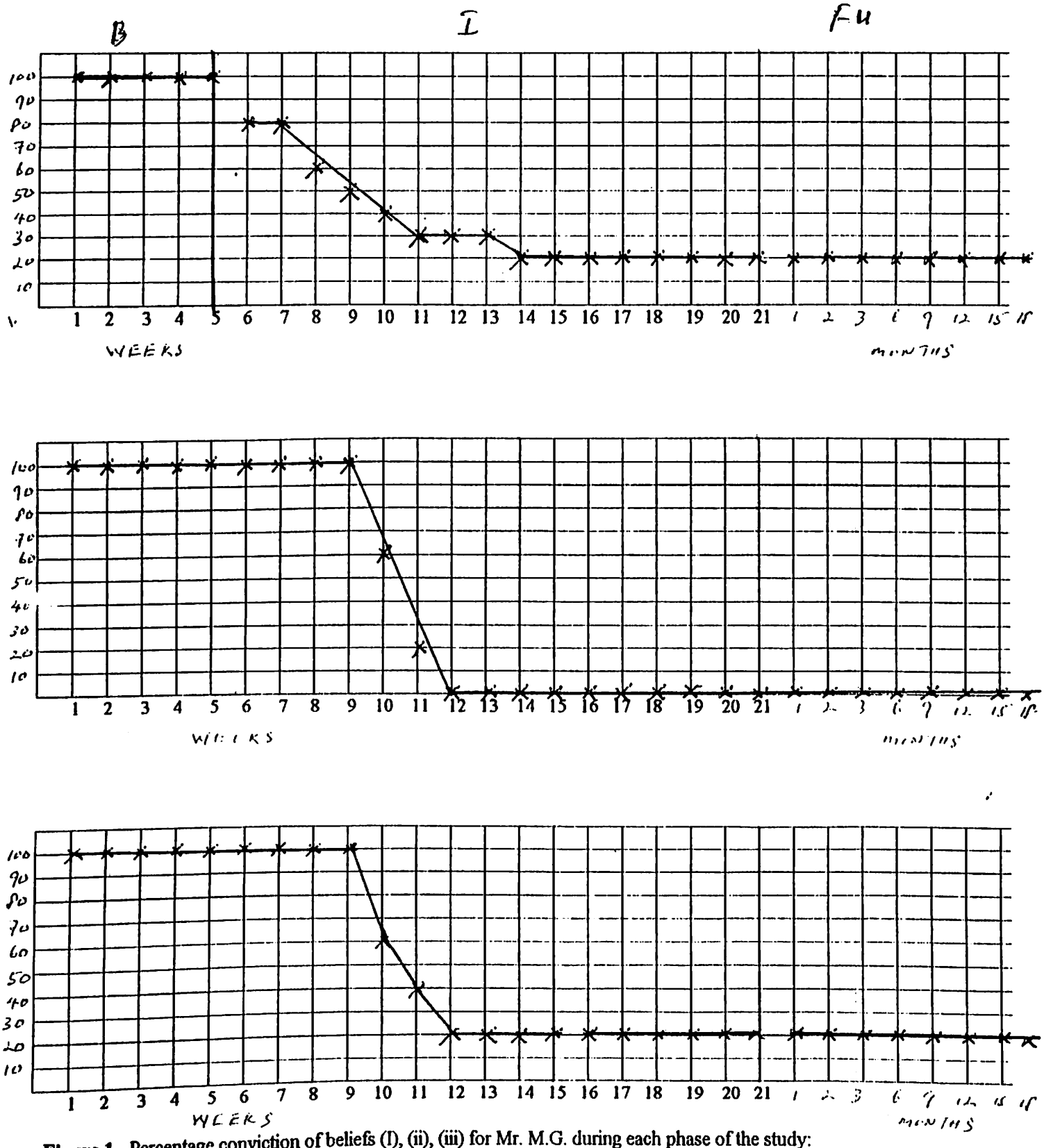


Figure 1 - Percentage conviction of beliefs (I), (ii), (iii) for Mr. M.G. during each phase of the study: baseline (B), intervention (I), follow-up (FU)

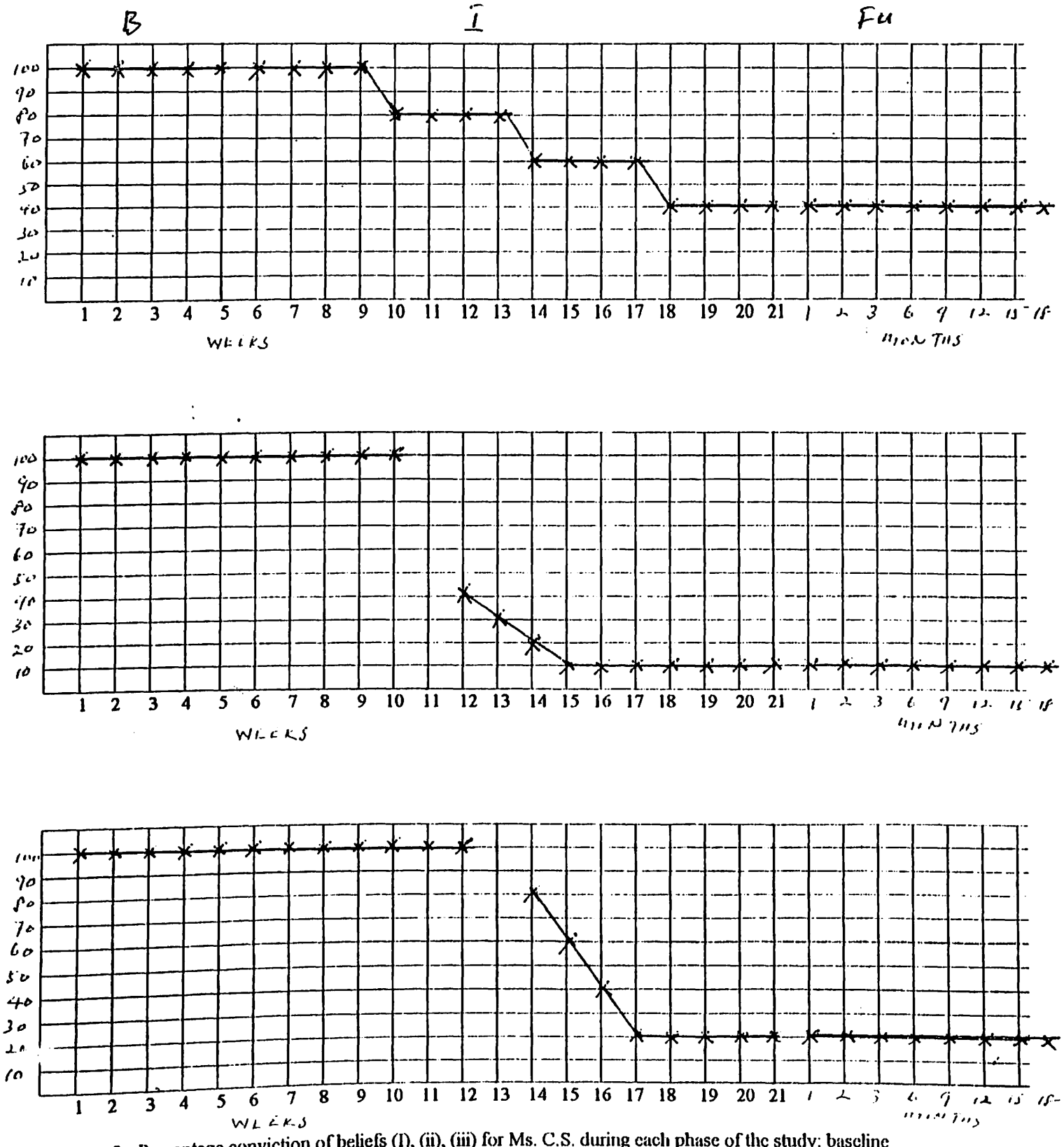
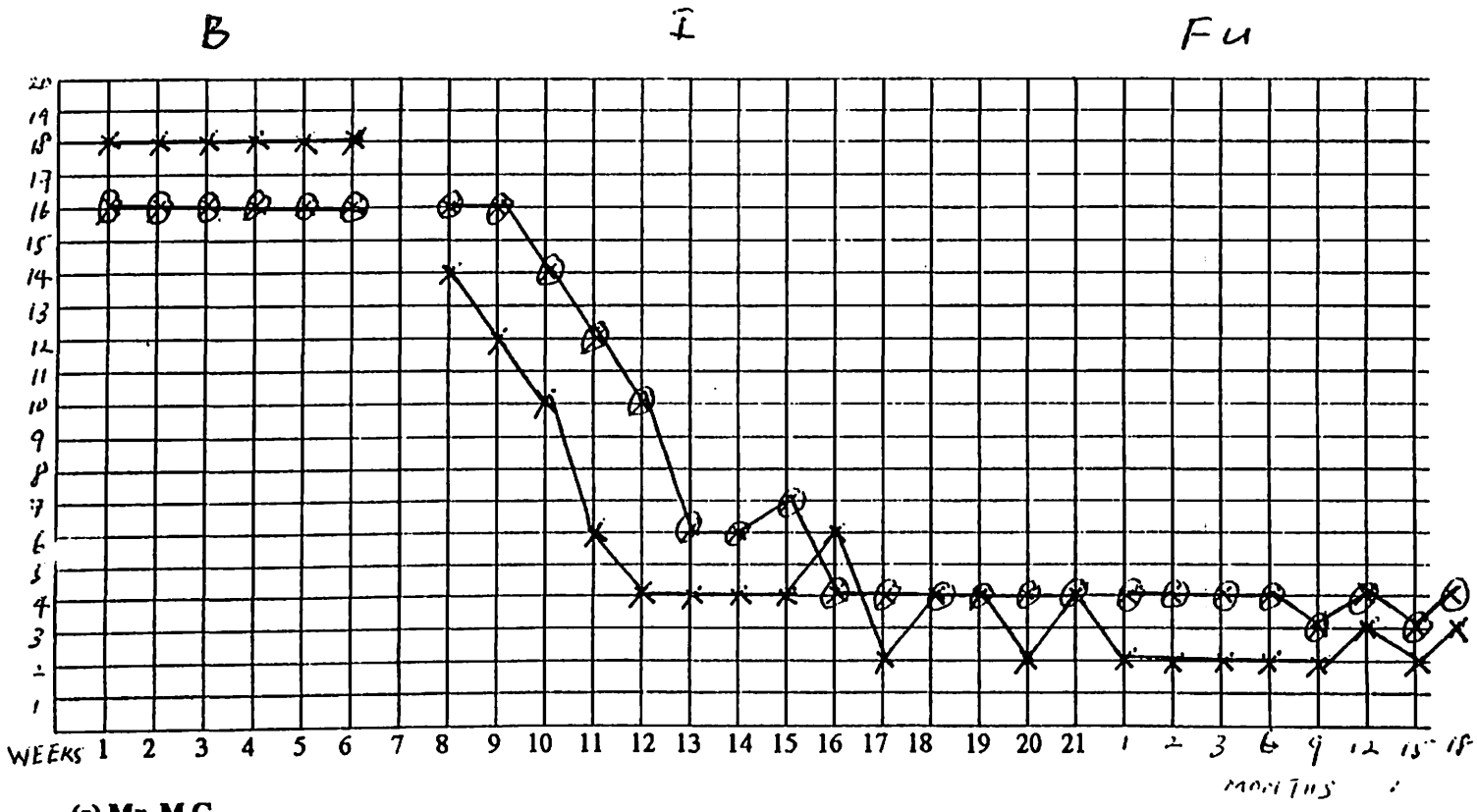
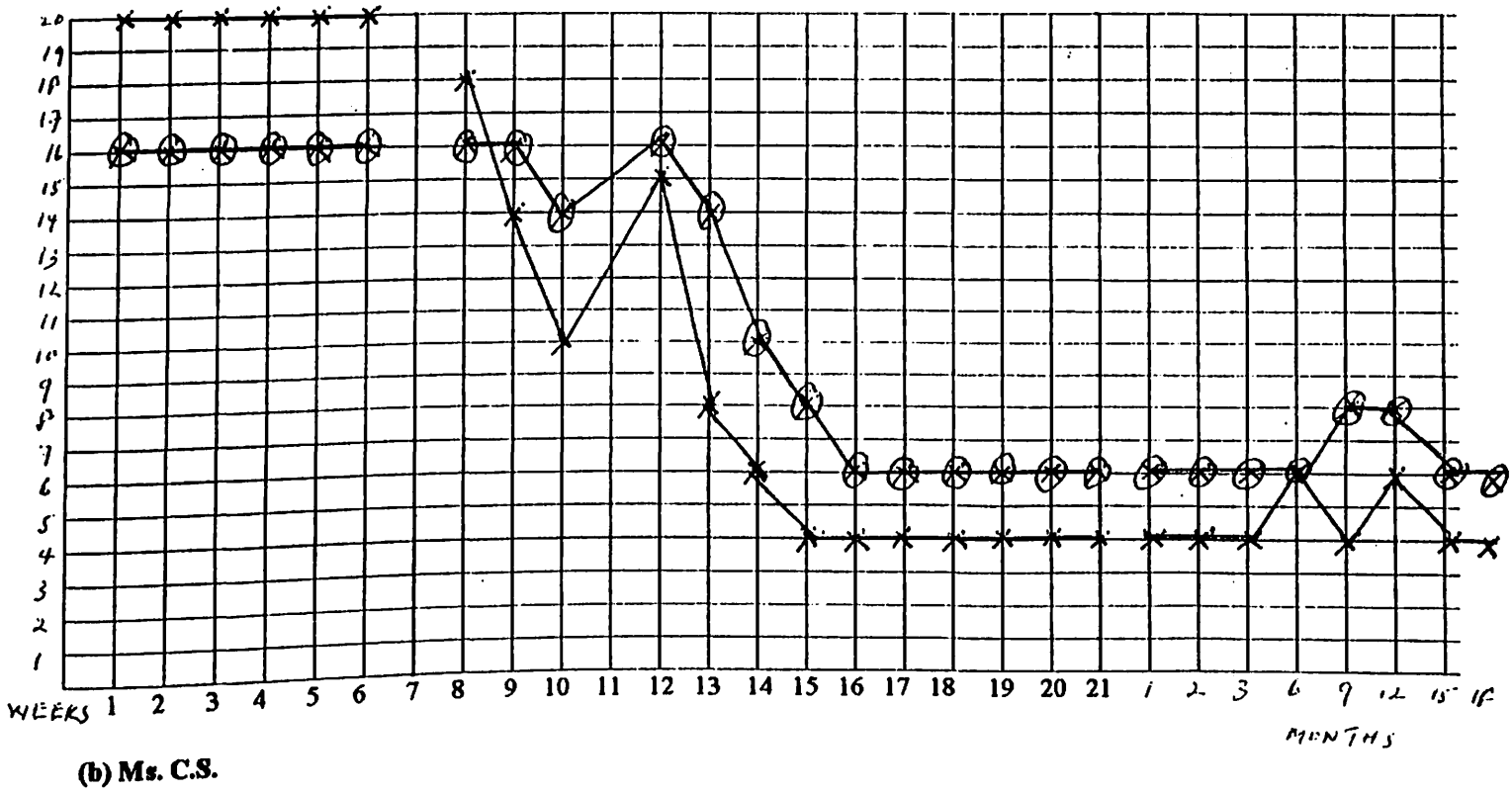


Figure 2 - Percentage conviction of beliefs (I), (ii), (iii) for Ms. C.S. during each phase of the study: baseline (B), intervention (I), follow-up (FU)

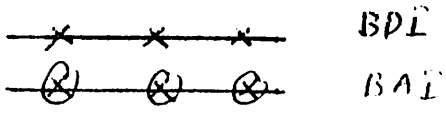


(a) Mr. M.G.



(b) Ms. C.S.

Figure 3 - Graphs showing the BDI and BAI scores of Mr. M.G. and Ms. C.S. during each phase of the study



PART TWO

In this part of the research, the same technique as proven useful above is being carried out in ten controls and ten study subjects.

SUMMARY

A number of psychological approaches to alleviating psychotic symptoms have been reported in the literature. The latest technique among them is cognitive therapy (CT). We have described an experiment using two patients who responded to cognitive therapy to reduce their delusions and the reduction was maintained until the end of the study which was 18 months after stopping intervention (1).This paper describes an experiment that makes use of cognitive psychotherapy to treat chronic drug resistant delusions (more than 2 years duration) in 20 patients with schizophrenia. The positive response of all study subjects with the absence of symptom replacement and maintainance of response at 3 months follow-up, seem to imply that this technique is useful and more effort needs to be invested into this new area of psychotherapy for psychosis.

KEY WORDS:

Delusion
Psychotherapy
Cognitive therapy
Schizophrenia
Risperidone

INTRODUCTION

Despite advances in pharmacological treatments for positive schizophrenia symptoms, many sufferers of schizophrenia continue to experience residual psychotic symptoms. In recent times too, there has been a growing interest in studying particular symptoms of psychosis, such as hallucinations and thought disorder (2,3).

However, in spite of the fact that delusions are extremely common in psychosis, this symptom has suffered experimental neglect (4,5,6). Before we embark on a process of treatment of delusions, we have to understand the definition of delusions. Karl Jaspers (7) said of delusions: "The term delusions is vaguely applied to all false judgments that share the following characteristics to a marked, though undefined, degree: (a) they are held with

an extraordinary conviction, with an incomparable, subjective certainty; (b) there is an imperviousness to other experiences and to compelling counter-argument; (c) their content is impossible". Jasper's work still stands as one of the most important treatises on delusions and his definition is the basis of modern definitions of delusions. This can be seen in a standard modern textbook of psychiatry where delusions are defined by Mullen(8) as having five elements; absolute conviction, self-evidence, lack of amenability to reason, fantastic or inherently unlikely content, and being a belief not shared by the believer's own subculture. However,modern understanding of delusions has lost some of the depth of the original works, and they are often viewed as unitary, all or nothing phenomena, particularly in relation to the diagnosis of psychosis. This view does not do justice to the known complexity of delusional experiences, and particularly to the complexity of the changes that occur during the process of recovery from delusions.

Our theoretical perspective on delusions has been influenced by two main sources, the literature on verbal self-regulation of behavior (9,10) and Maher's work on delusions (11,12). Our interest has been on the common features of delusional thinking. Maher (11,12) proposed that a delusion can be regarded as a normal attempt to make sense of an abnormal perceptual experience. A clear paradigm case would be a delusion that was secondary to auditory hallucinations, the argument here being that the hallucinations puzzled and perhaps distressed the individual concerned and so he or she searches for a meaningful explaination of them. The delusion would arise from this effort after meaning, and would be invested with psychological force of having rid the individual of the sense of bewilderment. According to Maher, the reasoning processing that produces delusions does not differ from that which produces so-called "normal" beliefs, it is just that bizarre perceptions demand bizarre explanations.

Maher's contention that a delusion may be rational, although incorrect, has been questioned recently with the discovery that people with delusions have biased reasoning (13). Under certain experimental conditions people with delusions appear to show bias in their attributional style, in their judgment of covariance, and in their probabilistic reasoning (14).

Traditionally delusions have been defined on the basis of empirical claims of discontinuity eg. as beliefs that were undeniably false, that were held with total and unshakable conviction, that were not shared by others with the same cultural background and that were based on incorrect inference (DSM IV) (15). Individually these criteria have been disputed: thus, a delusion need not be false (16), it need not be held with absolute or unshakeable conviction (17,18), and it need not be based on incorrect inference (19). The criterion relating to the unusual content of delusions also may be questioned, since research has demonstrated how difficult it is to rate the "bizarreness" of delusions (19). Traditional criteria have also been challenged by a radical and exciting call to define delusions as points on a continuum with normality, the position on this continuum being influenced by dimensions of delusional experience such as degree of belief conviction and the extent of preoccupation with the belief (20). As well as stressing continuity, this new perspective also places great emphasis on the individual and on individual differences.

We have extensively reviewed techniques used to modify delusions based on the above theories (21) and suggested a treatment package. We have described two cases that we experimented sucessfully using the treatment package (1). In this paper we studied 40 patients using the same technique but divided them into two groups in terms of type of psychological treatment maintainance used i.e. those on CBT and those on other supportive psychotherapy. Our hypothesis was that those on CBT would respond easier or faster.

METHODOLOGY

Subject: The patients selected for the study were those diagnosed as chronic schizophrenia based on the DSM 1V criteria (15) by an independent psychiatrist. They were all outpatients. All were in residual stages of the illness and were on maintainance doses of neuroleptics or risperidone. The total daily dose of each patient was 350-500 mg. chlorpromazine equivalent in both groups. All had residual positive symptoms of delusion that has not responded further to drug treatment over two years or more. There were 10 patients in each group with 5 males and 5 females in each. There were no significant difference between the two groups with regards to age and duration of illness (mean age control group,36.7 years SD 9.7; study group, 37.1 SD 8.1; mean duration control group, 9.1 SD 5.9; study group, 9.2 SD 5.8)

Measures: Following Brett-Jones et. al. (17), we measured both degree of belief conviction and preoccupation. Following Hole et. al. (22) degree of conviction was also measured by asking for percentage rating of conviction. All measures were administered at the end of every session throughout the entire study.

Again in keeping with Brett-Jones et. al. (17), accomodation and reaction to hypothetical contradiction (RTHC) were assessed. These were assessed at the start of the sessions.

Because little is known about the potential effects on other behavior of the loss, or partial loss, of a delusion, it seemed desirable to cover at least some of the possible clinical ramifications. To achieve this, two further measures were used. These were the Hamilton Depression Scale (HDS) (23), Hamilton Anxiety Scale (HAS) and a short symptom checklist comprising the various schizophrenic delusions and hallucinations as described in Wing's Present State Examination (24). It should be emphasized that the symptom checklist was used not in any diagnostic capacity but solely for descriptive purposes. These were administered both before and at the end of intervention phase, and at each follow-up date.

Procedure: Sessions lasting approximately 40 minutes to one hour each were conducted once a week throughout the study. All interviews were conducted by the author. A detailed description of the procedure can be found in Azhar and Varma (21).

(a) **Baseline**: Throughout this phase as much relevant data as possible about the patient's beliefs and evidences for the beliefs were established and patients were asked to rank them

in order. At no point were their beliefs or evidences challenged at this time. This phase took a minimun of five weeks.

(b) Disputing beliefs : This phase took a maximum of 16 weeks. Following Brett-Jones et. al. (17) we assessed RTHC first. We then challenged the delusions using the "verbal challenge" procedure of Lowe and Chadwick (25), and incorporating the non-confrontational approach of Milton et. al. (26) and Watts et. al. (18). This phase is ended with reality testing as described by Hole et. al. (22).

(c) Follow-up: To assess for maintainance of behaviour change, 1-month, 2-month, 3-month follow-up meetings were conducted. At these sessions all the measures were administered. After the final follow-up, an independent psychiatrist interviewed all patients to assess their conviction in the delusional belief at that point in time.

RESULTS

Belief conviction

The primary measure of recovery from delusions was the degree of believe conviction. The beliefs used for assessment were broken down. Each belief was challenged separately during the intervention phase. During baseline sessions, percentage conviction was extremely stable for all patients. All patients in both group were able to reduce markedly their belief convictions throughout the intervention phase and maintained the reduction at follow-ups. There was no significant difference between the two groups but there is a trend towards better and faster change in the study group (see Figure 1).

(Insert Figure 1 here)

Accomodation

During the baseline interviews, all patients did not recognize any external event that caused them to reject their delusional belief or to lower conviction in that belief. However following the introduction of verbal challenge, all but one patients were able to report instances of disconfirmation. There was also no significant difference between the two groups. However, the study group shows faster change (see Figure 2). Three patients on risperidone were able to accomodate at the 4th. intervention week while only two patients on other neuroleptics could start to accomodate on the 6th. intervention week. One patient from the other neuroleptic group could not accomodate throughout the study period.

(Insert Figure 2 here)

Reaction to hypothetical contradiction.

When faced with hypothetical contradiction, all but one patients responded on several occasions that if such an occurence did take place, they would either lower their belief conviction or reject their belief althogether. Again as in accomodation, there was no significant difference between the two groups but there was clear indication that the study group responded faster than the control group (see Figure 3). Three patients from the former group were able to reject their belief by the 4th. week while only two patients in the latter group were able to reject their beliefs by the 6th. week. One patient from the latter group could not reject his belief throughout the study period.

(Insert Figure 3 here)

Hamilton Depression / Anxiety Scales

Figures 4 and 5 show clearly the decline in both depression and anxiety scores for both groups of patients as the belief conviction score declines. Again there is no significant difference between the two groups but there is a trend towards better response in the study group.

(Insert Figures 4 and 5 here)

Symptom checklist

Results from the symptom checklist revealed that both groups of patients did not report any new symptom during the study. The symptom checklist proved sensitive to the changes in belief conviction brought about by the intervention for both groups of patients.

Validation of the effect

The effect of the intervention was externally validated by an independent psychiatrist with interviews being conducted after the final follow-up. All patients reported that although their beliefs were not completely extinguished, they were able to understand that there were different ways of thinking about their ideas and there were other plausible explainations other than the delusion. The clinician concluded that the intervention had given the patients insight and coping skills that continued to be of benefit. The most unresponsive patient from the control group also reported that he too could understand the different ways of looking at his beliefs and even though his overall belief convictions has dropped by only 30 %, he could maintain the reduction by frequent reality testing to reconvince himself of the wrong beliefs. The clinician also concluded that even this patient has learned coping skills and gained sufficient insight to his beliefs and that the intervention was definitely beneficial.

DISCUSSION

As with other research that have tried to modify delusional thinking in people with schizophrenia (8,18,25,26), our study indicates that very obvious reductions in delusional beliefs can be achieved in a relatively small number of sessions.The key is to analyse the beliefs correctly at baseline and decide effectively which belief to challenge first. This will make subsequent challenging of other beliefs easier. To analyse these beliefs effectively, it is advisable if a conceptualization of the beliefs based on the cognitive model be constructed first along the line described by Azhar and Varma (21).

Clearly these findings do not support the view that delusions are the result of motivational factors and not amenable to the kind of verbal challenge used in this present study, and consistent with the findings of Milton et al (26), there was a correlation between decline in conviction of the delusion and the reduction in overall psychiatric disturbance as in this study by the HDS and HAS. The result of the symptom checklist too offer no evidence of "symptom replacement" following the weakening of the delusional belief.

The verbal challenge produced a strong reduction in conviction score in both patients and subsequently reality testing further reduced the belief conviction. This same effect has been shown recently by Chadwick and Lowe (27) in their experiments.

In Hole's et al study (22), both the patients who experienced a reduction in belief conviction subsequently came to view their beliefs less as absolute truth and more as hypotheses that they could "reality test". The same happens in our study. Both groups of patients appeared to engage in reality testing after intervention with verbal challenge and were more eager to further engage in reality testing to test out their "hypotheses" which were originally construed as "beliefs". This accomodation test also seems to work best after intervention and not before i.e at the baseline sessions. In Brett-Jones study (17), the results on the accomodation measure suggest that such patients are not actively engaged in an ongoing process of reality testing their beliefs.

The RTHC measure revealed that when actually confronted with an instance of hypothetical contradiction, on some occasions, both groups of patients said it would lead them to lessen their belief conviction and in most cases, would reject the belief entirely. This would seem to suggest that although they have the potential to accomodate contradiction, this was not evident in their everyday lives as shown by their performance on the accomodation test. Brett-Jones et al (17) reported that those subjects who ultimately entirely rejected their delusional beliefs dealt with hypothetical contradiction in a more rational way than those who did not , and this lead them to speculate that RTHC might be of some value in predicting the success of attempts at belief modification. This study seems to support this idea.

Harrow, Rattenbury and Stoll (28) discussed the issue of "private events". They argue that in modification studies it is possible that demand characteristics will bring about changes in a subjects overt verbal behaviour while leaving it unaltered at the covert level, i.e. they might acknowledge that their beliefs are implausible to others without doubting that they

are true. To address this problem, in our study, the independent assessments by the psychiatrist were essential in recognizing that the reduction in the degree of belief conviction in both patients were, indeed, true.

The approach of our intervention is conceptually consistent with the notion of a continuum of functioning by Strauss (20) and the views of Maher (12) who states that "the cognitive processes whereby delusions are formed differ in no important respect from those by which non-delusional beliefs are formed". The patients in our study found it beneficial to see their beliefs as having arisen out of their life experiences and that their reactions were understandable. This and the added impact of normalization, emphasized the extent to which the patients were like other people, rather than set apart by a "mental illness".

The most important aspect of the intervention is that the degree of belief conviction were maintained at a low level even at the third month follow-up and independent assessments indicating that this method can be of benefit to those patients whose delusions did not seem to be controlled effectively with drugs. More work needs to be carried out. The sample size needs to be increased and the duration of follow-up should be much longer than three months and perhaps other psychological treatment should also be considered. We are looking into these areas. For the moment, cognitive psychotherapy seems to be a very useful adjunct for chronic schizophrenia with residual positive symptoms.

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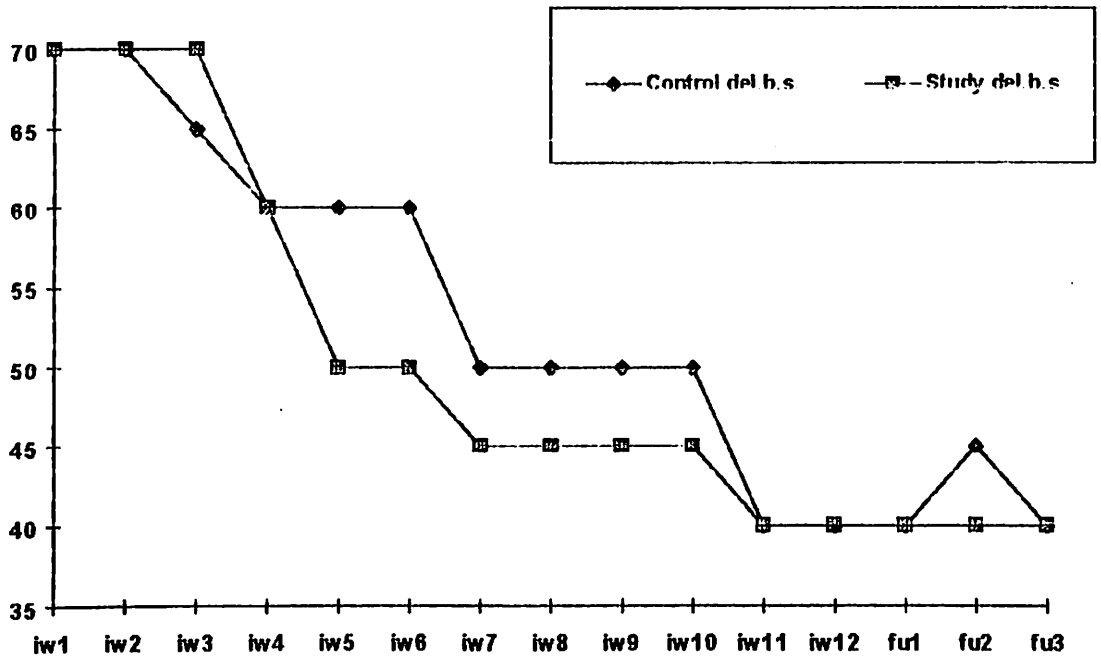

Figure 1 - patients belief conviction while receiving Cognitive Therapy

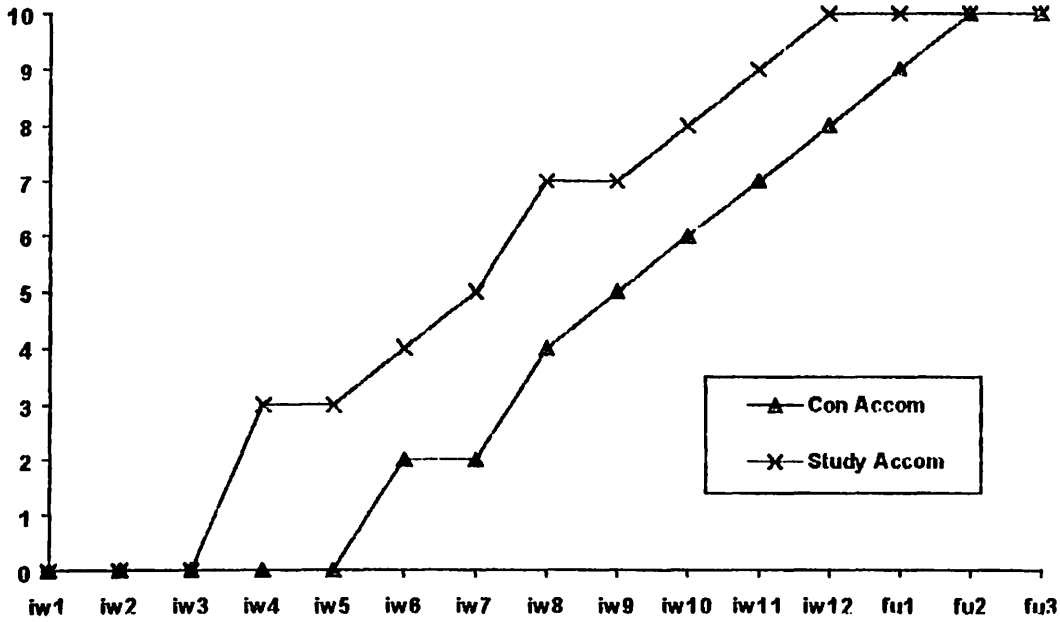

Figure 2 - patients accomodation while receiving Cognitive Therapy

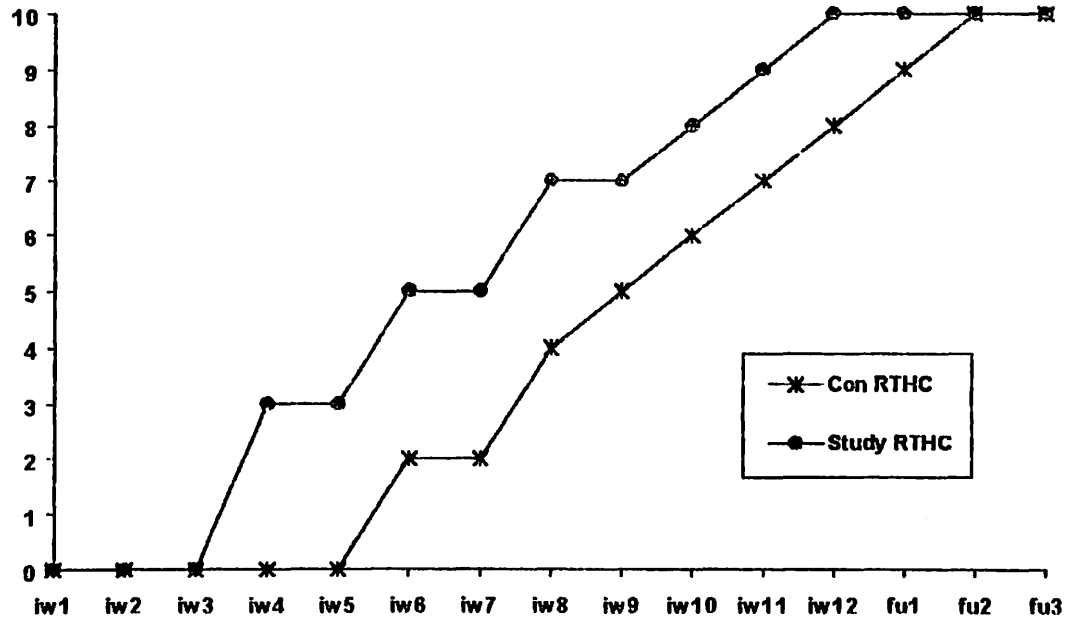

Figure 3 - patients RTHC while receiving Cognitive Therapy

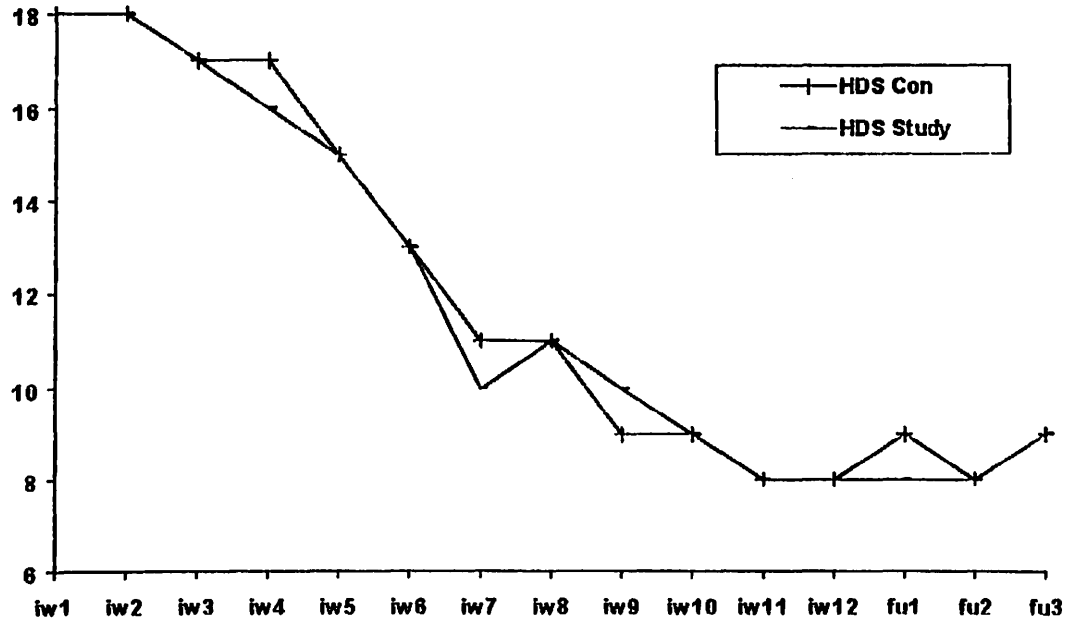

Figure 4 - patients HDS while receiving Cognitive Therapy

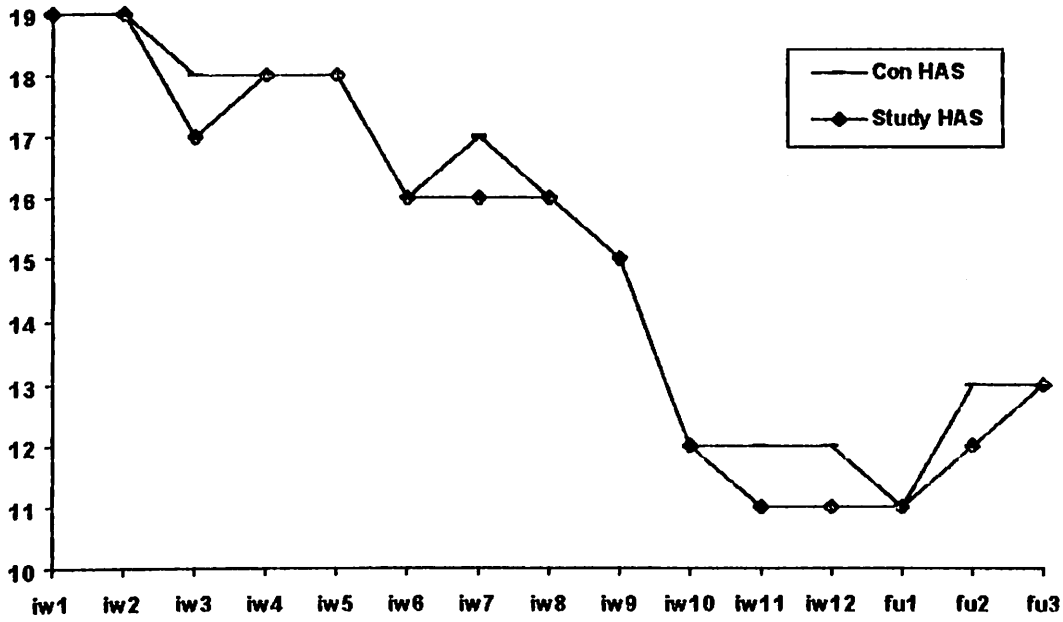

Figure 5 - patients HAS while receiving Cognitive Therapy

APPENDIX

NAME:_____

AGE :_____

SEX :_____

CODE:_____

	IW 1	IW 2	IW 3	IW 4	IW 5	IW 6	IW 7	IW 8	IW 9	IW 10	IW 11	IW 12	FU 1	FU 2	FU 3
DEL. B.S.															
ACCOM.															
RTHC															
HDS															
HAS															
SYM. CL.															

NAME:_____

AGE :_____

SEX :_____

CODE:_____

	IW 1	IW 2	IW 3	IW 4	IW 5	IW 6	IW 7	IW 8	IW 9	IW 10	IW 11	IW 12	FU 1	FU 2	FU 3
DEL. B.S.															
ACCOM.															
RTHC															
HDS															
HAS															
SYM. CL.															

CONTROL/DEL B.S.

Patient	IW 1	IW 2	1W 3	1W 4	1W 5	1W 6	IW 7	1W 8	IW 9	IW 10	1W 11	IW 12	FU 1	FU 2	FU 3
1	90	90	80	80	80	80	70	70	70	70	60	60	60	60	60
2	100	100	90	90	90	90	80	80	80	80	70	70	70	70	70
3	60	60	50	50	50	50	40	40	40	40	30	30	30	40	30
4	60	60	50	50	50	50	40	40	40	40	30	30	30	40	30
5	60	60	50	50	50	50	40	40	40	40	30	30	30	40	30
6	70	70	70	60	60	60	50	50	50	50	40	40	40	40	40
7	70	70	70	60	60	60	50	50	50	50	40	40	40	40	40
8	60	60	60	50	50	50	40	40	40	40	30	30	30	40	30
9	60	60	60	50	50	50	40	40	40	40	30	30	30	40	30
10	70	70	70	60	60	60	50	50	50	50	40	40	40	40	40

CONTROL/ACCOM. (blank =No);(Y=Yes)

1													Y	Y	Y
2															
3									Y	Y	Y	Y	Y	Y	Y
4								Y	Y	Y	Y	Y	Y	Y	Y
5								Y	Y	Y	Y	Y	Y	Y	Y
6										Y	Y	Y	Y	Y	Y
7											Y	Y	Y	Y	Y
8						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
9						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
10												Y	Y	Y	Y

CONTROL/RTHC (R=able to reject idea)

													R	R	R
1															
2															
3									R	R	R	R	R	R	R
4								R	R	R	R	R	R	R	R
5								R	R	R	R	R	R	R	R
6										R	R	R	R	R	R
7											R	R	R	R	R
8						R	R	R	R	R	R	R	R	R	R
9						R	R	R	R	R	R	R	R	R	R
10												R	R	R	R

CONTROL/HDS

1	18	18	17	17	15	15	13	13	10	10	8	8	8	8	8
2	19	19	19	19	17	15	13	13	10	10	8	8	8	8	8
3	18	18	17	17	15	15	13	13	11	11	10	10	11	10	11
4	19	19	19	19	17	15	13	13	11	11	10	10	11	10	11
5	18	18	19	19	14	10	8	8	8	8	8	8	9	8	9
6	17	17	17	17	15	13	11	11	10	10	10	10	10	10	10
7	18	18	15	15	14	10	9	9	7	7	7	7	8	7	8
8	17	17	15	15	14	12	10	10	8	8	7	7	8	7	8
9	18	18	17	17	15	13	10	10	8	8	6	6	9	6	9
10	18	18	15	15	14	12	10	10	7	7	6	6	8	6	8

CONTROL/HAS

1	19	19	19	19	19	18	18	17	16	14	14	14	13	13	13
2	20	20	18	18	18	16	17	16	15	13	13	13	12	12	12
3	19	19	17	17	17	15	16	15	15	12	12	13	12	12	12
4	20	20	19	19	19	17	19	18	18	16	16	16	15	18	18
5	19	19	17	17	17	15	18	17	16	13	13	12	11	11	11
6	18	18	18	18	18	15	17	16	15	12	12	10	9	9	7
7	19	19	18	18	18	16	16	14	12	9	9	9	8	8	10
8	18	18	18	18	18	16	16	14	12	10	10	12	11	13	12
9	19	19	18	18	18	15	16	16	15	10	11	10	9	12	13
10	19	19	18	18	18	17	17	17	16	11	10	10	10	12	12

STUDY/DEL B.S.

	IW 1	IW 2	IW 3	IW 4	IW 5	IW 6	IW 7	IW 8	IW 9	IW 10	IW 11	IW 12	FU 1	FU 2	FU 3
1	80	80	80	70	60	60	50	50	50	50	40	40	40	40	40
2	80	80	80	70	60	60	50	50	50	50	40	30	30	30	30
3	60	60	60	60	60	60	50	50	50	50	40	40	40	40	40
4	60	60	60	50	40	40	30	30	30	30	30	30	30	30	30
5	60	60	60	50	40	40	40	40	40	40	40	30	30	30	30
6	60	60	60	50	40	40	40	40	40	40	40	30	30	30	30
7	70	70	70	50	30	30	30	30	30	30	30	30	30	30	30
8	70	70	70	60	50	50	40	40	40	40	40	30	30	30	30
9	80	80	80	70	60	60	60	60	60	60	50	40	40	40	40
10	80	80	80	70	60	60	60	60	60	60	50	50	40	40	40

ACCOM./STUDY

1										Y	Y	Y	Y	Y	Y
2								Y	Y	Y	Y	Y	Y	Y	Y
3								Y	Y	Y	Y	Y	Y	Y	Y
4				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
5				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
6						Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
7				Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
8							Y	Y	Y	Y	Y	Y	Y	Y	Y
9											Y	Y	Y	Y	Y
10													Y	Y	Y

RTHC/STUDY

										R	R	R	R	R	R
1															
2								R	R	R	R	R	R	R	R
3								R	R	R	R	R	R	R	R
4				R	R	R	R	R	R	R	R	R	R	R	R
5				R	R	R	R	R	R	R	R	R	R	R	R
6						R	R	R	R	R	R	R	R	R	R
7				R	R	R	R	R	R	R	R	R	R	R	R
8							R	R	R	R	R	R	R	R	R
9											R	R	R	R	R
10													R	R	R

HDS/STUDY

1	20	20	19	18	16	13	10	10	10	8	8	8	8	8	8
2	18	18	17	16	16	12	9	11	9	7	6	6	6	6	6
3	17	17	16	15	13	11	8	8	8	8	8	8	8	8	8
4	19	19	17	16	16	15	12	14	12	10	8	8	8	8	8
5	19	19	18	17	17	16	14	14	14	12	10	10	10	10	10
6	18	18	19	18	16	14	11	13	11	9	7	7	7	7	7
7	17	17	18	17	15	13	9	9	9	9	9	9	9	9	9
8	16	16	14	13	12	10	8	10	8	8	8	8	8	8	8
9	18	18	16	15	14	13	9	9	9	9	8	8	8	8	8
10	18	18	16	15	15	13	10	12	10	10	8	8	8	8	8

HAS/STUDY

1	18	18	16	16	16	10	10	10	9	8	7	6	6	6	8
2	19	19	17	19	19	14	14	14	14	13	12	11	11	11	13
3	20	20	18	20	20	17	17	17	15	13	12	11	11	11	13
4	21	21	19	19	19	19	19	19	19	17	16	15	15	15	17
5	17	17	15	17	17	17	17	17	17	16	15	14	14	14	16
6	22	22	20	20	20	18	18	18	18	16	15	14	14	14	16
7	15	15	14	14	14	12	12	12	11	9	8	7	7	7	9
8	22	22	20	22	22	20	20	20	18	14	12	11	11	11	14
9	19	19	16	16	16	15	15	15	13	10	10	8	8	8	10
10	17	17	15	17	17	16	16	16	16	14	13	13	13	12	13

age/c g	30	27	45	40	42	37	39	34	37	36
sex/c g	m	m	m	m	m	f	f	f	f	f
Duration of illness	5	6	15	12	15	7	10	5	8	8
age /sg	29	29	41	45	43	39	38	33	39	35
sex/sg	m	m	m	m	m	f	f	f	f	f
Duration of illness	5	7	14	15	14	9	8	5	8	7

cg=control group, sg=study group.